

REMARKS

Claims 1-19 are pending in this application. No new matter is added by this Amendment. The specification is amended to clarify the unit of molecular weight values expressed in "kpse" and to overcome the rejections under 35 U.S.C. §112, first and second paragraphs. Specifically, the unit "pse" is indicated as an abbreviation for polystyrene equivalent while the unit "kpse" is indicated as an abbreviation for kilo polystyrene equivalent in paragraphs [0030] and [0031], respectively.

The courtesies extended to Applicants' representative by Examiner RoDee at the interview held on October 6, are appreciated. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below and constitute Applicants' record of the interview.

I. Information Disclosure Statement

The Patent Office indicated that reference No. 9 (New Application Atty Docket Number 117546) listed in the December 23, 2003 Information Disclosure Statements (IDS) was not available to the Patent Office because it was not identified by application number and no legible copy of reference No. 9 was filed with the IDS. Applicants respectfully submit that sufficient information was provided to enable the Patent Office to identify the application (the inventor name and attorney docket number were included).

However, to expedite resolution of this issue, Applicants resubmit a clean Form PTO-1449 attached to this Response, listing only prior reference No. 9, with updated application information. Particularly, in the clean Form PTO-1449, prior reference No. 9 is now listed as U.S. Pub. No. 2005/0136351 A1.

No fee is due for resubmitting the clean Form PTO-1449 because the application data for U.S. Pub. No. 2005/0136351 A1 was not available at the time of the filing of the IDS on December 23, 2003.

Applicants respectfully request the Patent Office to initial the reference U.S. Pub. No. US 2005/0136351 A1 and return a copy of the initialed PTO-1449 form to Applicants with the next communication.

II. Rejections under 35 U.S.C. §112

Claims 1-19 were rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the enablement requirement. In addition, claims 1-19 were rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. These rejections are respectfully traversed.

Specifically, the Patent Office alleges that the specification as filed fails to provide an enabling disclosure for a styrene acrylate binder having a weight-average molecular weight (Mw) and molecular peak (Mp) with units of "kpse" or for a toner having a weight-average molecular weight (Mw) and number-average molecular weight (Mn) in units of "kpse" because the specification allegedly does not describe the meaning of molecular weight as specified in units of "kpse." In addition, the Patent Office alleges that claims 1-19 are indefinite because the Patent Office was not able to find any description of the unit "kpse" and how it relates to molecular weight of the toner particles.

Applicants submit that the specification as amended would have enabled one of ordinary skill in the art to make and use the claimed subject matter because the present specification discloses the use of gel permeation chromatography (GPC) to measure molecular weight values of styrene acrylate binders and toner particles. See paragraph [0030], on page 8 of the specification. The units "pse" in conjunction with GPC for

molecular weight determination is well understood to indicate that the basis for the molecular weight is a polystyrene standard.

That is, since a molecular weight of the standard polystyrene is known, a correlation between the molecular weight of the reference polystyrene and the corresponding retention time (elution time) can be established by passing the reference polystyrene through the GPC. The sample to be evaluated, in this case the styrene acrylate binder, is then injected into the same GPC. A detector is used to detect the elution time of the sample. The molecular weight of the sample can then be calculated based on the elution time of the sample and the correlation between the molecular weight of the reference polystyrene and the corresponding elution time of the reference polystyrene. Lower molecular weight materials take longer to pass through the column than higher molecular weight materials. Thus, the obtained molecular weight of the sample (styrene acrylate binder) is relative to the molecular weight of the reference polystyrene.

Hence, the molecular weight of the styrene acrylate binder is in the units of "pse", or polystyrene equivalent. The correctness of these units is confirmed by, for example, the attached first article on "Determination of Molecular Weight" (see page 3, explaining GPC, polystyrene standards and the requirement to report the molecular weight as being in terms of polystyrene equivalent).

In addition, the unit "pse" is known to express polymer average molecular weight. Applicants submit that the second attached article entitled "MARK-HOUWINK-SAKURADA CONSTANTS FOR CARBOXYLATED SEGMENTED POLYURETHANE" indicates that the unit "pse" is known for expressing average molecular weight (Mw) of a polymer. As shown in Figures 1, 2 and 5, and as explained on page 620 of this second

attached article, an average molecular weight (Mw) of a carboxylated polyurethane (PEUA) sample is expressed in the units of "pse."

Clearly, one of ordinary skill in the art of making toner particles would have known and appreciated the unit of "pse" as it relates to measuring the molecular weight of styrene acrylate binders in GPC. Thus, as agreed with the Examiner, one of ordinary skill in the art would also have appreciated the unit "kpse" as he or she would have known that "kpse" stands for kilo polystyrene equivalent. The appreciation of GPC and these molecular weight units would have enabled one of ordinary skill in the art to make and use the claimed subject matter. In addition, the units "pse" and "kpse" are definite as they particularly point out and distinctly define the metes and bounds of the claimed subject matter.

Thus, Applicants submit that because GPC is known and the units "pse" and "kpse" further indicate the fact that a polystyrene standard was used, the rejections under 35 U.S.C. §112, first and second paragraphs should be withdrawn.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-19 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachments:

Clean Form PTO-1449

First Article Entitled "Determination of Molecular Weight"

Second Article Entitled "MARK-HOUWINK-SAKURADA CONSTANTS FOR
CARBOXYLATED SEGMENTED POLYURETHANE"

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